

1. A process for the preparation of polyol fatty acid polyester, comprising heating a mixture of polyol, fatty acid ester, emulsifying agent and catalyst under conditions sufficient to cause reaction of the polyol and the fatty acid ester, wherein the fatty acid chains of the fatty acid ester have from about 6 to about 14 total carbon atoms, wherein the emulsifying agent comprises a fatty acid soap having fatty acid chains of from about 16 to about 22 total carbon atoms, and wherein the mixture is heated at a pressure sufficient to maintain a substantially constant reflux rate of the fatty acid ester during the reaction of the polyol and the fatty acid ester.

2. A process according to claim 1, wherein the process further comprises the step of adding additional fatty acid ester after reaction of the polyol and original fatty acid ester has begun.

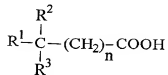
3. A process according to claim 1, wherein the degree of esterification of the polyol fatty acid polyester is at least about 70%.

4. A process according to claim 1, wherein the fatty acid chains of the fatty acid ester have from about 8 to about 12 total carbon atoms.

5. A process according to claim 1, wherein the fatty acid chains of the fatty acid ester have from about 8 to about 10 total carbon atoms.

6. A process according to claim 4, wherein the fatty acid ester comprises a branched chain fatty acid ester.

7. A process according to claim 6, wherein the fatty acid ester is prepared from an acid having the structure:



wherein R¹ is a hydrocarbon, R² and R³ are independently selected from hydrogen and a hydrocarbon, n is from 0 to about 11 and the acid has from about 6 to about 14 carbon atoms.

8. A process according to claim 1, wherein the fatty acid ester is obtained from an oil selected from the group consisting of coconut oil, fractionated coconut oil, and mixtures thereof.

9. A process according to claim 8, wherein the pressure is decreased during the heating step.

10. A process according to claim 8, wherein the pressure is in the range of from about 60 to about 190 mm Hg.

11. A process according to claim 1, wherein the polyol comprises sucrose.

12. A process according to claim 1, wherein the pour point of the polyol fatty acid polyester is not greater than about -15°C .

13. A process according to claim 1, wherein the mixture is heated at a temperature in the range of from about 115°C to about 150°C .

14. A process according to claim 13, wherein the mixture is heated at a temperature of about 135°C .

15. A process according to claim 1, wherein the catalyst is selected from the group consisting of alkali metals; alloys of at least two alkali metals; alkali metal hydrides; alkali metal lower alkyls; alkali metal alkoxides of lower alcohols; carbonates and bicarbonates of alkali metals; carbonates and bicarbonates of alkaline earth metals; and mixtures thereof.

16. A process for the preparation of polyol fatty acid polyesters, comprising heating a mixture of polyol, fatty acid ester and catalyst wherein the fatty acid chains of the fatty acid ester have from about 6 to about 14 total carbon atoms and at least 50% the polyol's hydroxyl groups are esterified and wherein the mixture is heated at a pressure sufficient to maintain a substantially constant reflux rate of the fatty acid ester during the reaction of the polyol and the fatty acid ester.

17. A process according to claim 16, wherein the polyol comprises sucrose.

18. A process according to claim 17, wherein the fatty acid chains of the fatty acid ester have from about 8 to about 12 total carbon atoms.

19. A process according to claim 18, wherein the fatty acid chains of the fatty acid ester have from about 8 to about 10 total carbon atoms.

20. A process according to claim 18, wherein the fatty acid ester comprises a branched chain fatty acid ester.

21. A process according to claim 16, wherein the fatty acid ester is obtained from an oil selected from the group consisting of coconut oil, fractionated coconut oil, and mixtures thereof.

22. A process according to claim 16, wherein the polyol fatty acid polyester has a pour point of not greater than about -15°C .

23. A process according to claim 16, wherein the mixture further comprises an emulsifying agent comprising a fatty acid soap having fatty acid chains of from about 16 to about 22 total carbon atoms.

24. A process according to claim 16 wherein no emulsifying agent is added to the mixture.

25. A process for the preparation of higher polyol fatty acid polyesters, comprising heating a mixture of polyol, fatty acid ester and catalyst to form a polyol fatty acid polyester wherein the polyol fatty acid polyester has a pour point of not greater than about -15°C .

26. A process according to claim 25, wherein the polyol comprises sucrose and the fatty acid chains of the fatty acid ester have from about 6 to about 14 total carbon atoms.

27. A process according to claim 25, wherein the fatty acid ester comprises a branched chain fatty acid ester.

28. A process according to claim 25, wherein the mixture further comprises an emulsifying agent comprising a fatty acid soap having fatty acid chains of from about 16 to about 22 total carbon atoms.